



Ten Year Summary Report

September 2001 to September 2011

PUBLIC HEALTH EMERGENCY PREPAREDNESS PROGRAM



*As the tenth anniversary of September 11, 2001 nears,
we join others across the nation -- indeed, the world -- in remembering.*

*Public Health Emergency Preparedness Program
Hawai'i State Department of Health
September 2011*



TEN YEAR SUMMARY REPORT

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Introduction

Over the past decade, the Hawai'i State Department of Health (HDOH) has increased its ability to prepare for and respond to public health emergencies with the help of funding from the United States Centers for Disease Control and Prevention (CDC) through the Public Health Emergency Preparedness (PHEP) Cooperative Agreement.

The PHEP program was established in 1999 via modest cooperative agreement funding from CDC to upgrade department bioterrorism preparedness and response capabilities as well as epidemiology and surveillance capacities. Following the September 11, 2001 attacks in New York City and Washington, D.C., and subsequent anthrax attacks through the U.S. Postal Service, the federal government increased funding streams to build capacity at the state and local levels to prepare for terrorist attacks.

The focus of the program has expanded over time to include influenza pandemics and the potential for other infectious diseases as well as environmental health threats including climate change and natural disasters. Recognition that such events also pose threats to the public's health and well-being has grown, necessitating state programs to develop more comprehensive response plans to face these additional challenges and address potential deficits in conventional public health emergency preparedness.

In Hawai'i, the PHEP program is managed by the Disease Outbreak Control Division. In November 2002, a specific PHEP program branch was established to plan and administer the CDC cooperative agreement. Critical public health staff persons were added to the program including: planners, trainers, health educators, communications specialists, epidemiologists, emergency response coordinators, laboratorians, and information technology specialists. The PHEP program encompasses the entire State, with staffing, infrastructure, and preparedness activities conducted in all four island counties: Hawai'i, Kauai, Maui, and Oahu. The efforts and accomplishments of the PHEP program have increased the State's capacity to prepare for all-hazards emergencies and ensured that the tools are in place for a robust public health response across the State even as threats evolve and emerge.

This report is meant to provide a thoughtful look back at and brief summary of some of the PHEP program's major milestones and achievements over the past decade as well as the challenges and opportunities as it moves into the next decade. It is hoped that this report will

provide a sense of where the program was before 9/11 and an understanding of some of its critical contributions to ensuring Hawai'i's public health preparedness. On this continuing journey, the PHEP program will continue to evolve and work to protect the health, safety, and well being of Hawai'i's people.

Mission

The mission of the PHEP program is to address and support public health preparedness, response, and recovery for all hazards by engaging in the following:

- Develop State public health capacity to identify a wide spectrum of potential threats
- Establish and ensure public health capability to respond to either routine preparedness related operations, an event, or a wide-scale emergency to prevent or control crises

Accomplishments and Goals

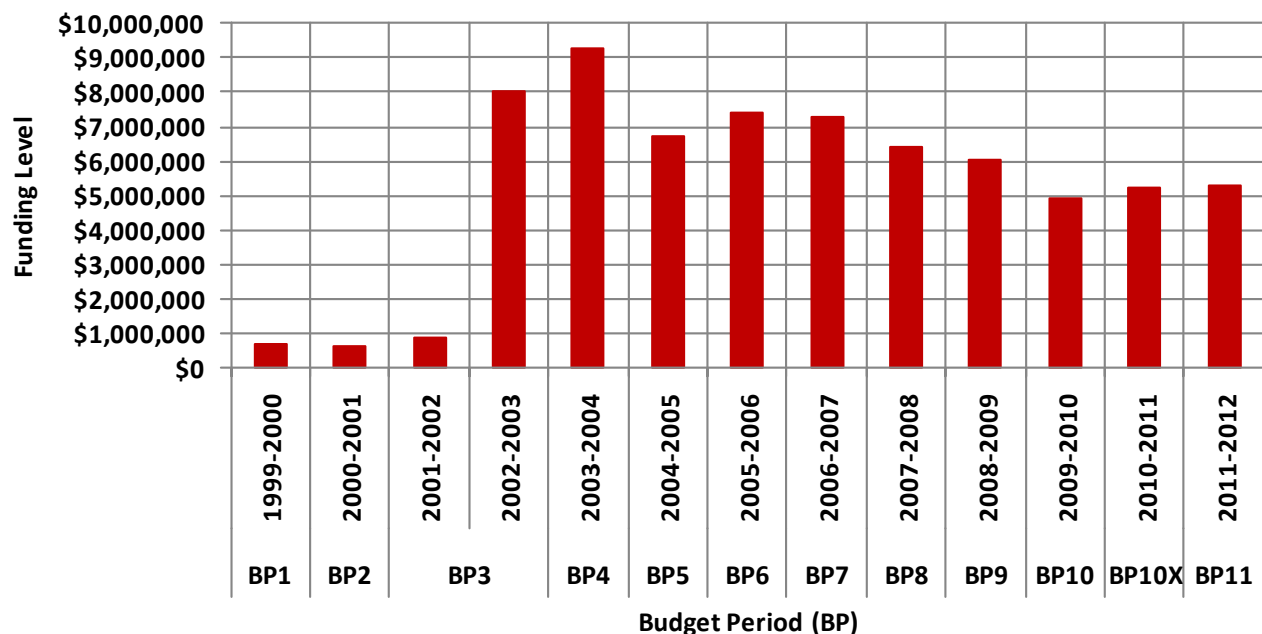
Effective planning

Develop **comprehensive State plans** and conduct trainings and exercises to ensure that plans can be **executed effectively** for a full range of large-scale, all-hazards events.

Before 1999, public health preparedness was a somewhat foreign concept. While prevention has always been core to public health, emergency planning and preparation on a large scale were relatively new ideas. There were no positions or programs in any health departments that focused on ensuring the foundation of a region's or state's public health emergency preparedness and response to natural and human-associated incidents and disasters.

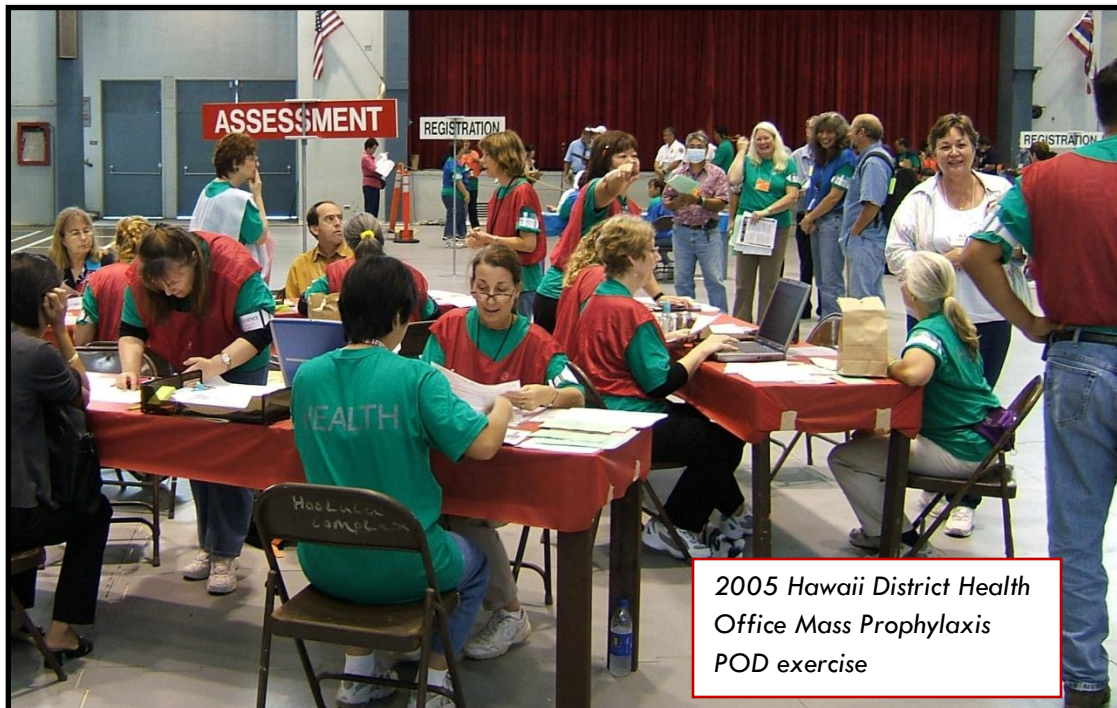
With its inception, the PHEP program actively worked to build and strengthen our State's public health preparedness. However, that program was just beginning and comprised only a handful of staff (4-7) during the first few years with a meager budget. In the wake of the 9/11 tragedy, all PHEP programs across the nation received a dramatic increase in fiscal support, which resulted in firmly establishing the program and Hawai'i's progress toward assuring its ability to respond to emergencies.

Public Health Preparedness Awards at a Glance



In terms of effective planning, a major area of progress over the years has been in the State's capacity to distribute needed medicines and healthcare related supplies through the Strategic National Stockpile (SNS). The SNS is the nation's storehouse of such supplies and is designed to supplement state and local agencies in the event of a national emergency. Starting with a nearly blank slate a decade ago, the PHEP program has developed Hawai'i's SNS plan into one which consistently meets or exceeds CDC standards to address the coordination and logistics of requesting, receiving, delivering, and distributing SNS supplies. Annually, the PHEP program coordinates and provides guidance for drills and training with key partners, staff and volunteers in points of dispensing (POD) to meet the goal of distributing any necessary medication to a target subset or the entire state population within a specified time period. Exercises have tested capabilities such as mobilizing POD staff to open sites and delivering supplies to pre-determined locations. Such exercises and trainings coordinated by the PHEP program assure an optimum level of staff preparedness to meet the needs of the State.

The HDOH Pandemic Influenza Preparedness and Response plan, first published in 2005 and updated in 2008, was put to the test during the real-world 2009 H1N1 pandemic. The comprehensive plan provided guidance and a starting point for the State's response to the pandemic, including quick references for key partners and stakeholders and pre-identified critical infrastructure and resources. Some ideas worked; others needed to be modified for the situation. The many lessons learned will be incorporated by the PHEP program into the plan, a working document requiring periodic updating and revising.



Developing and Enhancing Infrastructure

Maintain robust **epidemiology and surveillance** functions to ensure rapid disease detection and response capabilities as well as maintain the highest standards of **laboratory readiness** for both chemical and biological threats.

Laboratory Capacity

Before 1999, the State Laboratories Division (SLD) lacked sufficient staff and testing infrastructure for basic molecular tests such as conventional and real-time polymerase chain reaction (RT-PCR), which is often used, for example, in the detection of influenza. Additionally, the few SLD staff did not have experience in handling and processing high threat agents and toxins.

The Bioterrorism Response Laboratory (BTRL) was established within SLD in December 1999. Over the years, with increasing PHEP fiscal support, the BTRL has grown in critical staffing, resources, and experience. Today, it can quickly respond and test biological specimens for both potential national security risk organisms and high outbreak/impact organisms such as anthrax and plague as well as avian and H1N1 influenza, West Nile Virus, and norovirus. Additionally, the BTRL can test for threat agents from high-risk environmental samples (white powder) as well as for chemical warfare agents and toxic industrial chemicals in both blood and urine specimens.

A major accomplishment of the BTRL is the expansion of SLD testing capacity to perform advanced molecular testing for infectious agents such as pertussis, West Nile Virus, mumps, measles, and more recently dengue in April 2011. By expanding and ensuring timely testing for a variety of organisms, the BTRL provides HDOH disease investigators the necessary tools to detect and minimize the public health impact of infectious diseases in Hawai'i as well as the United States-affiliated Pacific Island jurisdictions.

Because of regular BTRL-led testing and exercises, Hawaii boasts a robust network of community labs trained and prepared to respond to a public health threat. Years of planning and preparation by SLD and partner laboratories (including military and veterinary labs) demonstrated their value when the 2009 H1N1 influenza emerged and grew into a full pandemic. Thanks to PHEP funding and SLD guidance, commercial labs were then able to perform initial flu testing and typing before sending to SLD for advanced testing. Community laboratories had improved their capacity for testing to respond to influenza year-round, and the response was extraordinary. Laboratories ramped up capacity and worked closely with HDOH for timely advanced results, reporting, and case investigations.

With the current economic crisis resulting in the elimination of other key laboratory

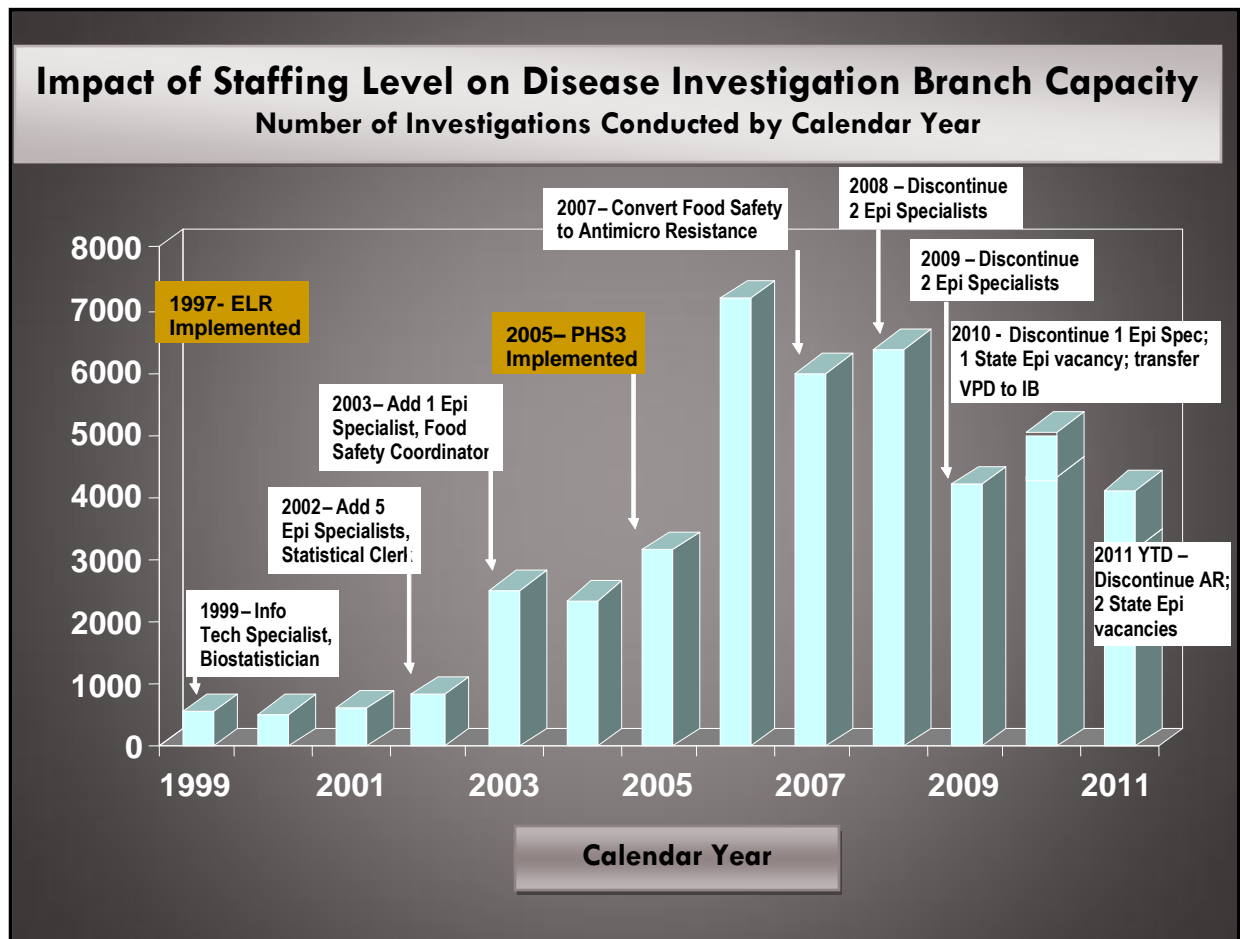
positions, the BTRL has become the last line of food defense for the State. The importance of this function to safeguard the public's health has been repeatedly emphasized during local and national outbreaks of *E. coli*, *Salmonella*, and other contaminants. This capability is of vital importance should there be suspicion of intentional contamination of the food supply.

PHEP funding has ensured that SLD is better equipped, has increased staff specialized in both biological and chemical testing, is utilizing advanced technologies, and is able to perform a number of required facility improvements to comply with safety and containment standards. While laboratory capability to identify suspect agents has been well established, full capacity to address multiple issues, both routine and emergent, remains a challenge given total dependence on ever-decreasing federal funding and limited State fiscal support.

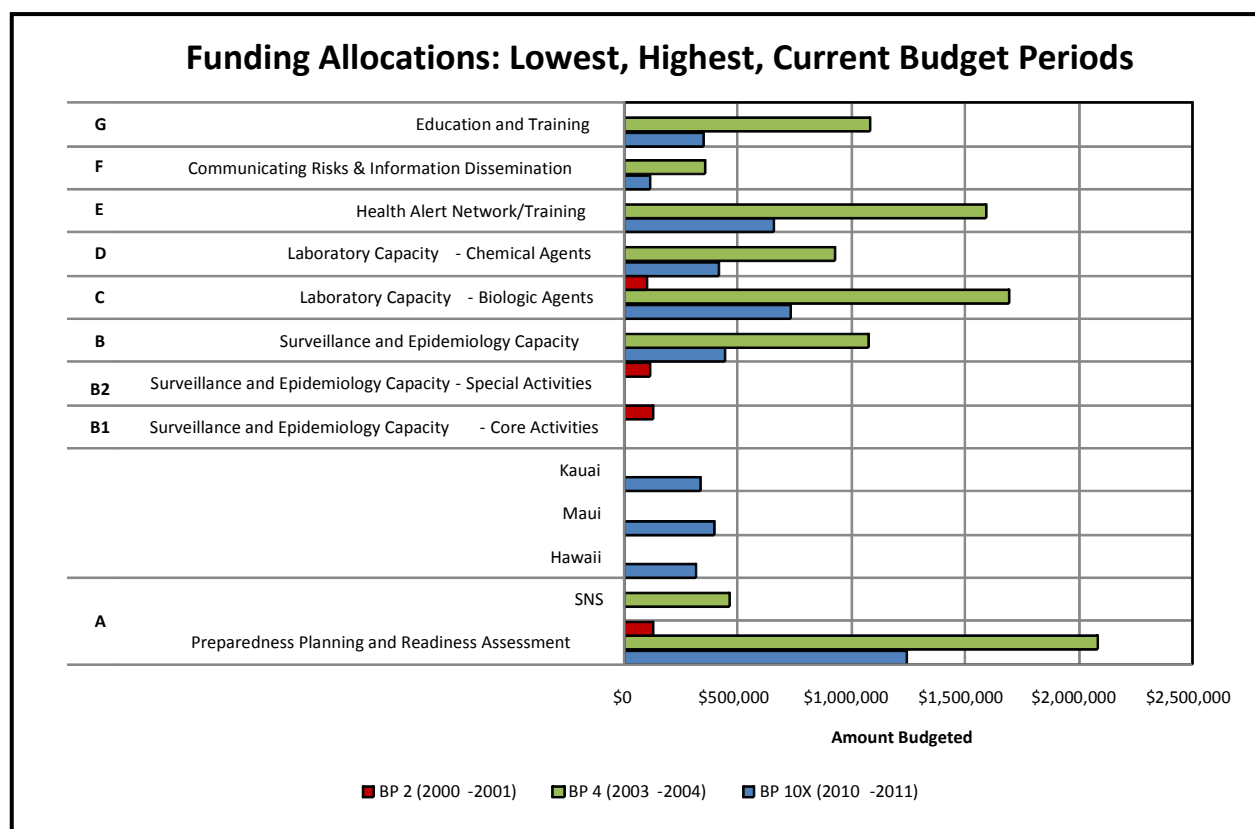
Epidemiological Surveillance and Investigations Capacity

Over the last 10 years, the PHEP program has contributed considerably to strengthening the capacity of infectious disease epidemiological surveillance and investigations, which is housed within the Disease Investigations Branch (DIB) under the HDOH Disease Outbreak Control Division. Disease surveillance has been enhanced in specific areas by the addition of certain resources, activities, and partnerships; some examples include updated computer equipment, training, and a dedicated phone hotline to ensure notification of HDOH standby duty officers after hours, and especially, the establishment of 24/7 electronic disease alerts and electronic disease reporting capabilities. A new system, MAVEN, will further increase information flow and efficiency and enable communication with other systems such as the State's nascent Immunization Registry.

Number of Investigations Conducted Statewide



More efficient disease alerting and tracking as well as much needed staffing and resources have facilitated timely responses to potential outbreaks and public health events. For example, DIB has been able to detect and determine the source of multiple foodborne outbreaks (e.g. *Salmonella* Paratyphi B contaminated ahi poke in 2007-8 and again in 2010), investigate cases and contacts, determine disease characteristics, communicate rapidly with the public and providers during the 2009 H1N1 pandemic, and work across program areas and other with state and federal partners to investigate and control vector borne diseases (e.g. dengue outbreak, April 2011). However, these increased capacities and resources are in jeopardy, and the program is forced continually to seek greater efficiencies to limit sacrificing accuracy and quality.



Ensure that infrastructure including **information exchange** platforms and **communication** systems are in place to support emergency response.

Throughout the last 10 years, the CDC PHEP cooperative agreement has been instrumental in providing funding to considerably improve HDOH Information Technology (IT) and enhance overall preparedness. Before 1999, most disease case counts were still recorded by tally marks on index cards that were added up each week and transmitted by a clerk via a computer with a

dedicated phone line to CDC. No one had individual desktop computers. Electronic reporting systems and basic internet connections and electronic communication seemed closer to science fiction and years away from being realized.

In one of the earliest and ultimately far-reaching PHEP project initiatives, IT network and communication infrastructure, including security and contingency planning, were vastly expanded and improved. By 2004, not only did key staff have individual computers, but thanks to PHEP investments in infrastructure development, high speed internet connectivity was established for 98% of HDOH locations throughout the State. This in turn enabled capabilities such as access to on-line information, web-based applications, email communication, education via distance learning, and live video conferencing. Backup communications equipment for landline phones was secured in the form of wireless/smart phones, portable and fixed satellite phones, and two-way radios (UHF/VHF/800 MHZ) to maintain communications during emergencies. Further, interoperable communication with partner agencies such as law enforcement and first responders was established. Response Manager, a web-based portal, communications, collaboration, and alerting system software tool, was funded and implemented by PHEP in 2003 to provide key stakeholders with a secure “real-time” alerting and communication system (for example, notifying key officials about an emerging public health issue as during the 2009 H1N1 pandemic).

Receiving key information in a timely manner is vital for preparedness and response to potential threats. An electronic case surveillance system providing event investigation management, case management, and predictive trend analysis across outbreaks and clusters was implemented in 2005. The work and connections leading to this system and the system itself have completely changed and advanced field investigations and public health response. This system is interfaced to an electronic laboratory reporting system that includes the four largest commercial laboratories in Hawai‘i, and interfaces have been and continue to be established to other HDOH systems such as the laboratory information management system, Immunization Registry, and electronic death reporting system. During the 2009 H1N1 pandemic, these systems were successfully tested and heavily utilized in tracking and managing the pandemic outbreak.

Department crisis and emergency risk communication capabilities have been greatly enhanced over the past decade through PHEP support. HDOH Communications has procured essential equipment, developed materials, and established and maintained a Memorandum of Agreement with the Aloha United Way (AUW) 211 call center in the event an information hotline and surge capacity need to be activated as during the 2009 H1N1 pandemic. County health offices have also been equipped to open and staff call centers as needed.

*Build **HDOH capacity** to manage a response with an all-hazards approach, according to consistent, standardized plans and procedures adopted across the agency and in alignment with external partners.*

In the immediate post-9/11 period, it was recognized that HDOH lacked a central command area from which to effectively coordinate the emergency operation efforts of the department. With the full support of HDOH leadership, PHEP staff worked to convert existing space into a Department Operating Center (DOC). By 2005, a fledgling DOC had been established to enable and enhance agency-wide support of emergency response and recovery efforts in a disaster. As funding became available, the DOC was equipped with necessary communications equipment and systems, including telephones, computers, and satellite systems, to allow emergency response staff to coordinate disaster response operations in an efficient manner and ensure situational awareness on developing events. To ensure operations even with loss of power, the DOC is backed up by a generator.



2011 DOC Functional Exercise

The DOC has been activated many times during the past six years for a range of real incidents (e.g. earthquake, tsunami, pandemic) as well as exercises. DOC activation includes linking with the State Emergency Operations Center (EOC) and county EOCs as dictated by the nature and scope of the incident. In all cases, PHEP staff persons provide essential technical, logistical, and incident management support for the DOC. Regular alerting drills and training have resulted in the ability to rapidly assemble HDOH staff with lead incident management roles within 60 minutes or less. The department's demonstrated ability to consistently meet this performance measure is a strong factor supporting its timely response to incidents.

The PHEP program has been the driving force within the department to achieve department-wide adoption and implementation of the National Incident Management System (NIMS), which contains protocols and best practices for a response to an incident. Establishing and maintaining HDOH staff trained in NIMS and the Incident Command System provides a more solid public health response capability and increased ability to work effectively with county, state, and federal agencies and non-governmental organizations.

Leadership and Collaboration

Community Outreach

*Develop education and outreach plans for increased collaboration with persons with access and functional needs in an emergency and support **community preparedness efforts**.*

In its earliest years, the PHEP program focused its limited resources on education of critical government workers and on general public education through existing programs. Community outreach efforts promoting emergency preparedness largely consisted of an occasional initiative as opposed to comprehensive, long-term plans.

Hurricane Katrina showed the inadequacy of such a piecemeal approach to fostering community partnerships and trying to ensure access and functional needs of all individuals. Subsequently, the PHEP program has been expanding its focus and seeking to steadily incorporate lessons learned from Katrina and other national as well as local incidents to strengthen relationships with all stakeholders. For example, the PHEP program collaborates with the HDOH Disabilities Communication Access Board to better prepare for and work with all populations in a disaster.

*Maui District Health Office
public health nurses triage
elderly and disabled evacuees
during a simulated hurricane
shelter during a pandemic
influenza outbreak scenario,
2006*



In the first half of the past decade, grant funding by state emergency appropriation made possible a public media campaign to promote awareness and education on emergency preparedness in the event of a pandemic. Television public service announcements, print materials, and community presentations were produced. This investment proved to be of long-term value when 2009 H1N1 emerged and the department was immediately able to distribute pandemic educational materials to the public.

In 2006, the Maui PHEP program worked with an ad-hoc coalition of organizations and government agencies to create the Maui Plan to Be Ready booklet, which served as the basis for the HDOH statewide version of the booklet. Over the last five years more than 300,000 copies of the various versions have been printed and distributed to encourage individuals and families to have an emergency plan, assemble emergency supplies, and get prepared. Innumerable additional copies have been accessed and downloaded from the online version (<http://Hawaii.gov/health/about/reports/plantobeready.pdf>).

The Disease Outbreak Control Division web pages provide links to the public on a wide range of public health emergency issues. While through PHEP funding and staff support great strides have been made to improve the web pages' content and readability, regular upkeep continues to be a challenge due to limited staff time. The PHEP program is also exploring the use of social media for emergency alerting and communication and is working to stay abreast of new developments for effective and secure implementation of current technology to enable better communication with the public.

*Provide **leadership** in taking an all-hazards approach to public health preparedness and **work with partners** in building a comprehensive emergency response system for the people of Hawai'i.*

Two weeks before H1N1 first hit public awareness in 2009, trainers presented their first classes in Pandemic Influenza Awareness to Hawaii County Fire Department personnel in Hilo. The classes, developed by the Hawaii District Health Office (HDHO) and coordinated through the Hawaii County Civil Defense, were intended to ensure that personnel in critical local government and private agencies were informed about the risks of pandemic flu and simple steps available to protect against it.

With the advent of H1N1 what started as a general information course quickly turned more specific and intense. Over the course of several months, HDHO staff presented the course to over 1000 essential workers island-wide, including Fire, Police, the Mayor's Office, Public Works, and Parks and Recreation. At the request of the Mayor, the class was also presented to the heads of all Hawaii County divisions and programs.

Ohana (family) and laulima (cooperation, working together) are among the deeply held values that are ingrained in the fabric of Hawai'i's communities. People recognize the need to work together to achieve success. The State's geographic isolation also reinforces the wisdom of looking forward and planning ahead. These values and understanding have served the people of Hawai'i well before 9/11 and in the years since. Against this backdrop, the PHEP program is fortunate to commit funding and resources to further facilitate HDOH activities in partnership-building and collaboration with others throughout the State.

The PHEP program works most closely with its sister programs within the Disease Outbreak Control Division but also plans, supports, and coordinates preparedness and response related activities with programs throughout the department, including the District Health Offices. In addition, the program partners with many other public and private agencies and organizations at the local, state, and national levels to ensure Hawai'i's capacity to respond appropriately, no matter the public health threat.

With the help of PHEP funding, the HDOH Communications office has taken leadership in organizing Crisis and Emergency Risk Communication training and exercises for HDOH staff as well as public information officers and communicators in all jurisdictions. Beginning in the mid-2000s, the PHEP-funded public information staff have helped establish and maintain Memoranda of Understanding with partners throughout the State for surge capacity in case of disaster.

*Demonstrate public health preparedness through **rapid response** and share **best practices**.*

Since 9/11, the State has endured several major floods, a devastating hurricane, an earthquake which forced the evacuation of two island hospitals, lava flows that destroyed homes and property, brush fires that closed roads and destroyed property, dengue and major foodborne disease outbreaks, a pandemic, tsunami threats, and many more crises on a varying scale. HDOH staff persons are called upon, sometimes on very short notice, to respond to many of these emergencies. Sometimes, there is no perceived emergency; yet HDOH works to ensure overall readiness so that when an emergency occurs the challenge is well met.

In October 2004, a sudden shortage of flu vaccine caused a national as well as local uproar and concern, especially for the medically compromised and the elderly. This would be the first major test of public health capacity to distribute and administer limited vaccines to a target population to ensure the public's health. From mid-November through mid-December of that year, at least 74 vaccination clinics were held at various community centers and even parking lots around the State to administer over 14,800 flu vaccines to the elderly and those with underlying medical conditions. This initiative strengthened partnerships among various HDOH programs including Immunization and Public Health Nurses with PHEP as well as HDOH with healthcare, non-profit and private community organizations, and other government agencies. The crisis and response directly led to establishing the first version of the Public Health Pandemic Flu Preparedness and Response Plan, and the lessons learned laid the foundation for future pandemic preparedness.



2005 Kauai District Health Office conducts nation's first full scale exercise drive-through POD

First implemented in 2007 in major part through PHEP funding and support after being successfully piloted in 2006, one of the most effective means of building and maintaining staff and community preparedness continues to be the annual school-located flu vaccination clinics. HDOH employees and multiple partners throughout the State work closely together to plan, organize, and conduct vaccination clinics in over 300 public and private schools each fall to provide free flu vaccinations to children ages 5-13 years old. Clinics are conducted under the Incident Command System and require a high degree of logistical planning and operational coordination.

The immense value of this program was demonstrated during the 2009 H1N1 pandemic when the pre-established infrastructure, partnerships, planning, and well-practiced operations together provided for swift and safe administration of the new pandemic vaccine to thousands of keiki throughout the State. Additionally, the program has contributed to Hawai'i's achieving the highest proportion of vaccinated children for the target age group among all the states, and to date, over 300,000 children have been vaccinated through the program, thus facilitating the health of our entire community.



2009 Stop Flu at School Clinic, Moanalua Middle School

The sum of all PHEP-led and related preparedness activities since even before 9/11 were tested during the 2009 H1N1 pandemic. The partnerships built and strengthened over the years, the plans developed, implemented, and still being conceived, the resources, staff, and infrastructure obtained and created, and the constant drive to look forward served Hawai'i well in that crisis. Yet, as with every situation, well-laid plans must be adapted and new lessons learned to continue improving preparedness and response for the next emerging public health threat.

Looking Ahead

Thanks to advances made with the help of PHEP funding, the State of Hawai'i is far better positioned in 2011 with real and measurable advances in public health preparedness to detect and respond to emergencies of all types and scales than it was in 2001. However, much ground still remains to be covered. As much as is possible, continuing to improve efforts to protect the public's health in the event of influenza pandemics, bioterrorism, or natural disasters as well as sustain critical operations in the coming years will be accomplished through ongoing development, testing, evaluation, and enhancement of comprehensive response plans in key HDOH areas: epidemiological capabilities, biological and chemical laboratory capacities, information technology infrastructure, public information and emergency risk communications, community preparedness, and training and education.

The PHEP program is committed to ensuring the State is prepared to meet future public health challenges through the continued development of critical preparedness capabilities and functions. However, the ability to sustain and continue to build on these efforts is in question as financial support declines. Funding for public health programs in general is decreasing and, unfortunately, this added burden comes in addition to a long underfunded and under-resourced public health infrastructure. In addition, Hawai'i's unique geographical location, configuration, and vulnerability to natural disasters are factors which compound the challenges that public health here must address. All too easily, the strides gained in the last 10 years may be unraveled without support to maintain and continue building upon the resources, staff, and experience gained.

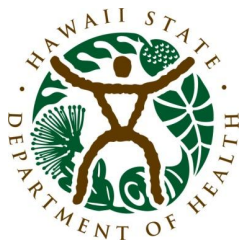
As it continues to evolve in this new decade of its existence, the HDOH Public Health Emergency Preparedness program will continue to do its part to contribute to not only a healthier, but a safer, more secure Hawai'i Nei.

The biggest threat to bioterrorism preparedness today is complacency. If a health threat does not happen, be it naturally occurring or deliberate, we tend to make it a lower priority. The worst thing we can do is to make something a priority after it happens. After it happens is too late; you are playing catch-up. Preparedness for a threat must be a priority before it happens.

*-- Anthony S. Fauci, M.D., Director
National Institute of Allergy and Infectious Diseases/National Institutes of Health*

Acronyms

AR	Antimicrobial Resistance
BTRL	Bioterrorism Response Laboratory
CDC	U.S. Centers for Disease Control and Prevention
DIB	Disease Investigations Branch
DOC	Department Operations Center
ELR	Electronic Laboratory Reporting
EOC	Emergency Operations Center
EPC	Emergency Preparedness Committee
HDHO	Hawai'i District Health Office
HDOH	Hawai'i State Department of Health
IB	Immunization Branch
IT	Information Technology
NIMS	National Incident Management System
PHEP	Public Health Emergency Preparedness
POD	Point of Dispensing
RT-PCR	Real-Time Polymerase Chain Reaction
SLD	State Laboratories Division
SNS	Strategic National Stockpile
VPD	Vaccine-preventable disease



Public Health Emergency Preparedness Program

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